

REMARKS

With entry of the instant amendment, claim 37 has been amended. This amendment adds no new matter and is supported throughout the application as filed.

Claims 37-39 are pending in the application.

The rejections are addressed in the order presented in the Office Action dated October 7, 2005.

Rejection under 35 U.S.C. § 103--claims 37 and 38

Claims 37 and 38 remain rejected as allegedly obvious for reasons previously set forth by the Examiner. In brief, the Examiner describes Bonjouklian as disclosing treatment of PI3-dependent cancers with wortmannin and wortmannin analogs. One of the cancers mentioned in Bonjouklian is ovarian cancer. The Examiner additionally cites Xiao and Skorski for describing wortmannin inhibition of gastric cancer cell lines and leukemia cells that overexpress PI3 kinase or require PI3 kinase for proliferation. The Examiner also cites Arnold as teaching that 3q26-qter is amplified in ovarian cancer and Volinia as teaching that PIK3CA is present at 3q26.3. The rejection is based on the allegation that one of skill would have been motivated to include ovarian tumors that were characterized by the amplification of a chromosomal region containing a PI3 kinase in the method of Bonjouklian because it was known in the art that 3q26 was amplified (Arnold) and that PIK3CA was found at 3q26.3 (Volinia). The Examiner contends that it would have been obvious that amplification of 3q26, which contains PI3 kinase, would result in elevated PIK3CA in ovarian cancer cells. The Examiner then concludes that it would have been obvious in view of Xiao and Skorski that cancers cells that overexpress or are otherwise PI3 kinase-dependent would be sensitive to wortmannin.

To the extent that the rejection applies to the amended claims, Applicants traverse this rejection for reasons of record and for the additional reasons provided below.

First, as Applicants have explained before, Arnold states that amplification of 3q26-qter suggests that the regions may contain one or more genes important for tumor initiation and/or progression, but states that no candidate oncogenes are known in this region (page 49, last

paragraph of column 2). Volinia's disclosure that PIK3CA is present at 3q26.3 predates Arnold's work. Arnold therefore provides evidence that one of the skill in the art prior to Applicants' invention could not have reasonably expected that PIK3CA would be an important target for treatment in ovarian cancer.

Further, a key point in the Examiner's argument is that that one of skill would expect that cells in which 3q26 and/or 3q26-pter would have elevations in PI3 kinase activity. No evidence is provided, however, supporting this position. If Examiner's supposition were true every gene contained in a chromosomal region that was amplified in cancer would be expected to be over-expressed. This is not reflected in the cited art.

One aspect of Applicants' invention is the recognition that PIK3CA amplification in ovarian cancer does in fact lead to increased PIK3CA activity and that proliferation of ovarian cancer cells can be inhibited by administering PI3 kinase inhibitors. In view of the foregoing, the rejection fails to establish that this invention is *prima facie* obvious. Applicants therefore respectfully request withdrawal of the rejection.

Rejections under 35 U.S.C. 103--claim 39

Claim 39 was also rejected as allegedly unpatentable over the art cited relating to the rejections of claims 37 and 28 above, and further in view of Powis, or alternatively in view of Lavin or in view of June. The Examiner contends that one of skill would have been motivated to use LY294002 in the methods of the invention, because it was known to be an effective inhibitor of PI3 kinase, as evidenced by any of the three secondary references. To the extent that the rejection applies to the amended claims, Applicants respectfully traverse. The cited art applied to claims 37 and 38 fails to establish a proper case of obviousness. The secondary references merely teach that LY294002 is a PI3 kinase inhibitor. Such disclosure does not cure the defects in the Examiner's arguments based on the primary references. Accordingly, claim 39 is patentable over the cited art. Applicants therefore respectfully request withdrawal of the rejection.

Appl. No. 08/905,508
Amdt. dated April 7, 2006
Reply to Office Action of October 7, 2005

PATENT

CONCLUSION

In view of the foregoing, Applicants believe all claims now pending in this Application are in condition for allowance. The issuance of a formal Notice of Allowance at an early date is respectfully requested.

If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned at 415-576-0200.

Respectfully submitted,

Jean M. Lockyer
Reg. No. 44,879

TOWNSEND and TOWNSEND and CREW LLP
Two Embarcadero Center, Eighth Floor
San Francisco, California 94111-3834
Tel: 415-576-0200
Fax: 415-576-0300
JML:jml
60724044 v1